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ABSTRACT

This manual was designed for an inservice workshop with business educators on strategies for math communication. The focus is on basic writing and math skills. Technology is incorporated in the curriculum. The manual is divided into six sections; four sections deal with communications skills and two sections with math skills. Each section includes a number of teaching strategies for the goal or goals listed, student activities for each strategy and/or goal, and references. The communication sections are as follows: (1) listening; (2) reading; (3) oral; and (4) written. The math sections are survival/basic and applied. In addition, this manual includes suggested transitional services for nontraditional populations such as the physically and mentally handicapped and other at-risk groups. Included as an attachment are worksheets for communications/listening and applied math. (NLA)

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Strategies

For

Communications

Math

with Technology

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CE 056 126

STRATEGIES

Communications Math with Technology

An In-Service Workshop

ACKNOWLEDGEMENT

Appreciation is extended to Business Education Consultants in the following states:

Colorado	Michigan	South Carolina
Connecticut	Mississippi	Utah
Illinois	Montana	Vermont
Iowa	Nebraska	Virginia
Kentucky	New York	Washington
Louisiana	Ohio	West Virginia
Massachusetts	Oregon	Wyoming

The curriculum materials that were shared contributed greatly to the development of the strategies in this manual. In addition, the materials contributed ideas for planned curriculum change by the participants.

The dedication and enthusiasm of the 15 business educators who participated in the workshop is greatly admired.

A heartfelt thanks goes to Birdie Holder, workshop consultant, who made an arduous task enjoyable. And, thanks to Darla Bennett who prepared the manual using desktop publishing.

Lydia Kercher, Assistant Professor
University of Wyoming
Workshop Director

INTRODUCTION

The number-one skill identified by business and industry is the ability to communicate. It is important for business educators to examine writing and math in the curriculum and focus on basic writing and math skills. It is also important to incorporate technology in the curriculum. This manual of strategies was developed to assist teachers in this endeavor. All strategies can accommodate at risk groups (handicapped, disadvantaged) and other non-traditional populations.

The manual of strategies was developed by participants in a curriculum development workshop planned by Vocational Education faculty at the University of Wyoming and funded through a grant from the Wyoming State Department of Education under the Carl D. Perkins Vocational Education Act, P.L. 98-524.

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Carol Ann Strader
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COMMUNICATIONS
LISTENING

Communications--Listening

Nita Berg
Carol Ann Strader

TEACHER STRATEGIES:

GOAL: Incorporate good listening skills in vocational classes.

Introductory

1. Introduce listening as one of the four communication skills considered important to professional success.
   ** About 15% of the school population is diagnosed with partial hearing losses. To insure that these students are able to function in the classroom, additional steps should be taken for clarity.
   a. Begin speaking when everyone is listening.
   b. Speak clearly and loudly for everyone to hear you.
   c. Use understandable language that is familiar to your students.
   d. Keep directions simple.
   e. Determine student understanding by asking the students questions and training them to ask questions.

2. Discuss the estimated amount of time people spend listening.

STUDENT ACTIVITIES:

Student assessment.
(Handout 1)

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
3. Discuss how listening differs from hearing.	Students are paired. In a time period of 10 minutes, students interview each other. At the end of the time, each student will stand up and introduce his/her partner to the class. At the end of the exercise, each student receives a handout in the form of a sunburst and places his/her name at the top. Each student then passes his/her paper to the right. The student receiving the paper will write a positive comment from the information they heard about that person. This process continues until every student has written a positive comment about every other student in the class.
4. Demonstrate the importance of listening through a learning activity.	Whisper a sentence to a student who, in turn, whispers it to another student. Follow this procedure until each member of the group has been told. Ask the last student to repeat what was heard. Compare story with what was originally whispered.
Developmental	
1. Discuss effective listening techniques.	Listening Skills Guidelines (Handout 2)

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
2. Identify the elements of the communication process.	Communication Model (Handout 3) Students prepare a one-minute skit demonstrating the communication model. One student (sender) produces an oral message. One student (receiver) listens but does not hear because of deliberate distractions. Repeat exercise but receiver actively listens and provides feedback to the sender. Discuss the importance of total involvement in the communication process.
3. Discuss how effective listening skills contribute to success.	See video on listening: COMMUNICATION: THE BASIC JOB SKILL--Sunburst Communications.
4. Demonstrate problems in one-way communication.	Provide student with Handout 4. Have student turn his/her back to the class. This student can use only verbal communication. No questions are allowed from the class. When exercise is completed, ask class members to judge whether their drawings are similar to the sample drawing. Discuss problems encountered.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
5. Demonstrate the need to listen carefully and get clarification if message is not clear.	Distribute copies of Handout 5 to students. Move rapidly through the following directions: Place a dot on the letter "i"; print the word "Xerox" in the blank spaces; if you saw a Papa Bull (PB), a Mama Bull (MB), and a Baby Bull (BB) in a pasture, which one should not have been there? (Circle one.) Discuss answers and problems encountered.
6. Demonstrate that most students need to increase listening efficiency.	Clip a two- or three-paragraph article from the newspaper. Read aloud the entire story. Ask students to answer correctly questions about the story. Optional Activity: Take out a dollar bill and offer it to the student who answers correctly all the questions about the story. Discuss the results and need to increase listening efficiency.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
7. Demonstrate the importance of asking questions for clarification and information.	Select a short paragraph/article that is not currently in the news. Divide the class into groups of four or five. Ask the first group to stay in the room and all others to leave the class. Read the article to the first group. They are allowed to listen only--no questions, no notes. After reading the article, ask the second group to return to the class. Have the first group repeat the story to them. Ask the third group to come in and hear the story from second group. Then ask the members of the third group what they had heard. Discuss additions and deletions to the original story and how notetaking could have facilitated accuracy.
8. Demonstrate the need to watch for non-verbal cues while listening.	Assign students to view a dramatic video. Tell them that they will listen to the first half of the show (no picture). and only watch the second half (no sound). The students will then write a report on the following: What information did they feel they were missing in the first half? In the second half? Did they find it more difficult to understand the first half or the second half? What clues did they listen for in the first half? What clues did they look for in the second half?

TEACHER STRATEGIES:

9. Discuss relationship between listening and job success.

STUDENT ACTIVITIES:

Give examples of office situations that require good listening skills. Example: good telephone listening skills could mean a difference between success and failure in public relations.

Students act as employees receiving oral instructions from their employer and then writing down what they have been told. Check accuracy of information heard and recorded.

Culminating

1. Demonstrate application of effective listening skills:

   knowing purpose
   asking questions
   clarifying message
   focusing on speaker
   taking notes
   interpreting message
   paraphrasing message
   understanding message

Give oral directions to students. Allow them to use ALL effective listening skills learned.

Situation: The students are to arrive at a mystery location by following the oral directions. Eample--the school store, a drive-in where the student would receive a prize!

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Harry Adam
Candy Dooper

COMMUNICATIONS
READING

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Develop competency in reading and understanding printed materials.	
1. Discuss various types of reading: critical reading, proofreading, or pleasure reading.	Students will look at a variety of materials and determine which type of reading would be appropriate.
2. Explain topic sentences.	Underline (or write on paper) the topic sentence of each paragraph. Using a partial outline of material, complete the outline identifying the topic sentences. In small groups, each student reads the material then the group completes the outline by identifying the topic sentences.
3. Explain supporting data.	Using a partial outline of the material, complete the outline by including important supporting data.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
4. Introduce SQ3R.	Students survey the material by skimming titles, headings, illustrations. Students formulate questions using the headings or section titles. Students read the material. Students recite orally or in writing the main ideas. Students review the material by re-reading to apply the information.
5. Explain paraphrasing.	After reading a passage each student will put the information into his own words. In groups, each student will present the information he read to the others in the group.

TEACHER STRATEGIES:

6. Explain summarizing.

STUDENT ACTIVITIES:

Students prepare a written summary on materials read.

Students prepare an oral summary and present it to the group.

Students are grouped by numbering off and are responsible for reading a portion of an article. All one's read page 1, two's --page 2, etc.

After reading, the one's meet with one's, two's with two's, etc. and discuss the material to check for understanding.

They are then regrouped so that each group consists of a one, two, three, etc. and each member presents a summary of his/her reading to the group.

TEACHER STRATEGIES:

7. Introduce 5-R note-taking.

STUDENT ACTIVITIES:

Students divide a sheet of paper by drawing a horizontal line across the page, 2 inches from the bottom. Draw a vertical line 2 inches from left edge down to the horizontal line to create 3 sections.

a. Record in the top right section as many meaningful facts and ideas from the reading as possible.

b. Reduce by summarizing the facts and ideas in the column on the left.

c. Recite by covering the large section and using the summary clues at the left to recite the detailed facts and ideas.

d. Reflect on the new material using what is already known and record in the bottom section.

e. Review by repeating steps c and d every week to ensure retention.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
8. Discuss the value of skimming.	Students read questions prepared by the teacher covering the material to be read. Students read the material for a set amount of time. Students answer the questions without looking at material. Students are given a limited amount of time to skim material to verify answers and indicate where answers can be found. Students read questions prepared by the teacher. Students skim the material to locate answers.

TEACHER STRATEGIES:

GOAL: Develop the ability to read aloud in group situations.

1. Provide opportunity for oral reading.

STUDENT ACTIVITIES:

Students are randomly selected to read aloud. The length and difficulty of passage may be adjusted to the ability of the reader.

Student reads aloud a minimum of one complete sentence but may continue to any point in the reading. The student calls on another student to continue the reading.

If the next student does not know where to continue the reading, he is subject to a penalty, possibly a loss of points. (The teacher may want to participate as a reader to increase student interest. If the teacher does not know where to continue, the class may be rewarded by adding points, etc.)

TEACHER STRATEGIES:

GOAL: Learn the vocabulary for a particular subject matter.

1. Introduce new vocabulary.

STUDENT ACTIVITIES:

Identify new vocabulary (words in bold, italics, etc.)

Paraphrase definition given using synonyms.

Prepare card file with term on one side and the definition on the other side.

Use the cards prepared in #3 in a Jeopardy or Concentration style game.

Compile a vocabulary dictionary using a loose-leaf notebook.

Students are given a set of flash cards containing a portion of the new vocabulary terms.

Each student studies his words for a specified amount of time.

Students are grouped so that all new terms have been studied by someone in the group.

Students are responsible for teaching the terms they studied to the rest of the group.

Students complete crossword puzzles and word search activities.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Read and follow directions.	
1. Provide written instructions.	Students read the directions. Students prepare a list of needed steps to complete a project. Students prioritize steps from their list to decide what must be done first, second, etc.
GOAL: Read/interpret charts, graphs, and tables.	
1. Introduce PVR technique.	Students preview visual by skimming over the title and other written information. Students view visual by scanning for details, including written, numerical, or symbolic information. Students review to evaluate their understanding of the visual by summarizing the information.
2. Present information in graph form.	Read a chart or graph and summarize the information. Compare two different graphs depicting the same information.
3. Present written information.	Represent the written information by preparing a graph or chart.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Verify information and evaluate the worth and objectivity of sources.	
1. Discuss reading for detail.	Compare/contrast articles on a particular topic from less respected and highly respected sources. Students prepare a bulletin board or collage using articles or advertisements with varying amounts of detail.
2. Discuss determining reliability.	Read articles written by manufacturers discussing a new product and compare the information to that prepared by an independent testing agency.
3. Discuss proofreading.	Students read their papers and proofread for accuracy of facts, grammar, punctuation, etc. Students exchange papers and proofread for accuracy.
GOAL: Become familiar with the layout of a text and learn how to use it.	
1. Explain how to use the textbook.	Students look up a word using the glossary. Students find a topic in the text using the index. Determine how new vocabulary is presented and emphasized in the text. Use reference materials provided in appendices.

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Kathy McCracken
Mildred Goggles

COMMUNICATIONS
ORAL

Communications--Oral

Kathy McCracken
Mildred Goggles

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
1. Show a videotape or film.	Write a critique of a TV ad considering honesty and sincerity. Evaluate the non-verbal techniques (body language, gestures, facial expressions, appearance). Identify the target audience. Identify pitch, tone, volume and speed.
2. Tape record students reading a passage. (video/audio/dictaphone)	Students review their own recording, keeping in mind pitch, tone, volume and speed. Using a personality checklist, evaluate their characteristics.
3. Plan and make oral presentation for giving directions/instructions.	Assign specific locations for giving directions on oral tape. Students select mystery locations for taping. Have students give instructions to perform an activity (putting on a coat or drawing an abstract design). Class discussion on slang usage.

TEACHER STRATEGIES:	STUDENT ACTIVITES:
4. Using reference materials, identify specific job titles.	Students identify positions using oral communications from a newspaper. From Dictionary of Occupational Titles, students identify positions using oral communications. Class discussion on sex equity terms in occupation listings.
5. Have student group projects.	Student groups interact to design school activity posters, using a software package. Assign a bulletin board topic to student groups. Brainstorm teenage needs and wants then have groups make up a collage, highlight those requiring money.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
6. Discuss proper oral communication techniques.	Have a student mouth a command and viewer try to lip read the message. Prepare a message for students to communicate using non-verbal clues (charade-type game). Introduce students to each other and then introduce themselves. Tell students a story and have them repeat it back to you to check clarity and understanding (repeat activity with students back to back). Use the whispering chain game. Use a timing piece to encourage students to speak slower.
7. Discuss and demonstrate correct telephone techniques.	Watch a video on using a telephone efficiently. Perform telephone simulation activities in the classroom. Assign students to answer the telephone and take proper messages. Have students make telephone calls to selected people giving them information. Make telephone calls asking for information.

TEACHER STRATEGIES:

8. Demonstrate advanced oral communication skills.

9. Discuss technology's effect on oral communication.

STUDENT ACTIVITES:

Students will perform a mock trial.

Set up a mock interview situation.

Perform an act of selling using pressure techniques.

Career Day participation (require a certain number of questions to be asked).

On a field trip demonstrate the proper place to ask for information (scavenger hunt).

Assign students topics to debate.

Have students demonstrate a procedure to another student (safe working condition).

Participate in discussion.

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COMMUNICATIONS
WRITTEN

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Written understanding of class/grading procedures.	
1. Hand out course syllabus and discuss the class expectations and grading procedures.	Listen and question.
2. Distribute a 3 x 5 card to each student.	Write understanding of class expectations and procedures. Sign and date the card.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Learn proper capitalization when hand addressing an envelope.	
1. Hand out envelopes that have been addressed properly using proper capitalization.	Identify the words that are to begin with a capital letter.
2. Explain where the address should be placed on the envelope.	
3. Hand out worksheet of names and addresses that have not been capitalized.	Do worksheet supplying proper capital letters.
4. Discuss worksheet.	
5. Hand out envelope to be addressed.	Address envelope to a friend.
GOAL: Improve punctation skills through dictation.	
1. Dictate short sentences. Each sentence contains only one principle of punctuation.	Transcribe from dictation.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Learn to apply correct grammar rules for nouns, pronouns, and adjectives.	
1. Explain proper use of nouns, pronouns, and adjectives.	Participation and discussion.
2. Handout of a paragraph with incorrect grammar.	Rewrite the paragraph applying the rules of proper use of nouns, pronouns, and adjectives.
GOAL: Learn to apply correct grammar rules for verbs and adverbs.	
1. Explain proper use of verbs and adverbs.	Participation and discussion.
2. Handout of a paragraph with incorrect grammar.	Rewrite the paragraph applying the rules for proper use of verbs and ad-
GOAL: Learn to apply correct grammar rules for prepositions, conjunctions, and interjections.	
1. Explain proper use of prepositions, conjunctions, and interjections.	Participation and discussion.
2. Handout of a paragraph with incorrect grammar.	Rewrite the paragraph applying the rules of proper use of prepositions, conjunctions, and interjections.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Learn to use reference materials to apply correct usage of capitalization, word division, abbreviations, expression of numbers in words or numerals, and punctuation.	
1. Explain use of reference materials to apply rules for capitalization, word division, abbreviations, and expression of numbers in words or numerals, and punctuation.	Participation and discussion.
2. Hand out sample paragraphs to complete with students.	Complete paragraphs with teacher using reference materials.
3. Hand out a paragraph with incorrect capitalization.	Rewrite paragraph applying correct capitalization rules.
4. Hand out a paragraph with incorrect word division.	Rewrite paragraph applying correct word division rules.
5. Hand out a paragraph with incorrect abbreviations.	Rewrite paragraph applying correct abbreviation rules.
6. Hand out a paragraph with incorrect usage of numbers in words or numerals.	Rewrite paragraph applying correct usage of numbers in words or numerals.
7. Hand out a paragraph with incorrect use of punctuation.	Rewrite paragraph applying correct use of punctuation.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Locate and record information found in a dictionary.	
1. Give students standard dictionaries and discuss and locate the type of information which can be found in a standard dictionary.	Participate in discussion and location of information.
2. Give students requests for information which can be found in a standard dictionary.	Locate and record the information requested.
GOAL: Spelling improvement.	
1. Explain use of dictionary and word division manuals for spelling rules.	Participation and discussion.
2. Hand out paragraph with spelling errors.	Use reference material to correct spelling errors.
GOAL: Learn to use thesaurus.	
1. Discuss why and demonstrate how a thesaurus is used.	Participation and discussion.
2. Give students a list of words for which to find synonyms.	Use the thesaurus to locate synonyms.
3. Give students a paragraph with selected words for which to find synonyms.	Substitute synonyms for selected words and rewrite paragraph.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Vocabulary word usage.	
1. Discuss why proper word usage is important.	Participation and discussion.
2. Hand out a list of vocabulary words to use in a paragraph.	Compose a paragraph correctly using the vocabulary words.
GOAL: Similar words.	
1. Discuss the importance of using the right word at the right time. Give examples of similar words (to, two, too).	Participate in discussion. Brainstorm a list of all similar words that students can generate at random.
2. Give students a worksheet on similar words.	Complete worksheet.
3. Give students a paragraph containing incorrect usage of similar words.	Edit and rewrite paragraph with correct usage of similar words.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Learn to recognize and write complete sentences.	
1. Discuss variations in sentence structure. Refer students to textbook for simple, compound, complex, and compound-complex sentences.	Participate in discussion.
2. Distribute handout on revising sentence structures.	Complete handout and discuss.
3. Discuss various ways to begin sentences such as beginning with a subject, a clause, a phrase, a verb, or an adverb.	Participate in discussion.
4. Use handout on revising sentence beginnings without changing the meaning of the original version.	Complete handout and discuss in class.
5. Discuss sentence fragments, run-on sentences, and comma splices.	
6. Distribute handouts on sentence fragments, run-on sentences, and comma splices.	Identify problem and rewrite to cor-
GOAL: Organize set of sentences into a logical order.	
1. Select a topic which requires material to be placed in sequence.	Place sentences in proper order.

Communications--Written

Nancy Fadala, Carma Johnson
Charlotte Walker

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Learn to edit written material.	
1. Explain proofreader marks.	Learn proofreader marks.
2. Distribute a written sample of material that needs to be edited.	Edit copy.
GOAL: Learn to write factual information with accuracy.	
1. Discuss importance of facts such as dates, addresses, and figures being correct.	Discussion.
2. Hand out worksheet with facts not consistently correct.	Do worksheet.
3. Discuss worksheet.	
4. List factual information to be included in a written report.	Write report.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Learn to prepare a sales slip.	
1. Discuss the need for the preparation of the sales slip.	Participate in discussion.
2. Distribute handout of completed sales slip. Discuss the steps for the preparation of the sales slip. Complete a sample with the class.	Review handout of completed sales slip. Complete sample with teacher guidance.
3. Give the students sales slips to complete.	

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Composing a reply.	
1. Discuss situations which require a written response (thank you, acknowledgement, adjustment, inquiry, etc.). Review basic letter parts.	Participate in discussion. Take notes.
2. Give students various situations which require a written response.	Compose an appropriate response for the given situation.
GOAL: Learn to organize and write an itinerary.	
1. Show students a sample itinerary and discuss why an itinerary is used, how to obtain information for flights, hotel accommodations, and travel arrangements. Review books that my be used such as HOTEL AND MOTEL RED BOOK and OFFICIAL AIRLINE GUIDE.	Participate in discussion.
2. Give students unarranged information for an itinerary.	Design an itinerary.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Format for reports.	
1. Display samples of several reports on overhead.	Observe, compare, and take notes.
2. Discuss specific format--top and bottom margins, line spacing, etc.	Take notes and discuss.
3. Assign sample rough draft report to type.	Keyboard assignment.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Writing a report.	
1. Discuss the purpose of writing a report.	
2. Discuss importance of writing in a clear and concise style.	Participate in discussion.
3. Discuss importance of writing on the receiver's level.	
4. Compare tone and style of letters and reports.	Discuss.
5. Display definition of a report.	
6. Present purposes of writing reports.	
7. Assign the preparation of a report which includes making a recommendation.	Prepare report. Proofread and edit rough draft of another students's report. Based on classmate's evaluation, revise first draft of report.

TEACHER STRATEGIES:

GOAL: Preparing a resume.

1. Define resume, giving other possible names (personal data sheets, personal records, etc.).

2. Discuss the importance of an attractive and complete resume in making a favorable impression.

3. Use overhead projector to show the students a variety of resumes, both good and poor.

4. Discuss the characteristics of an attractive resume.

   Typewritten
   Balanced on page
   Free from errors and noticeable corrections.
   Complete

5. List the various sections that usually are included within a resume.

   Heading
   Job applying for
   Work experience
   Education
   Interest/Activities/Honors
   References

STUDENT ACTIVITIES:

Based upon knowledge of resumes, evaluate resumes as excellent, good, fair, or poor.

Brainstorm for ideas.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Preparing a resume cont.	
6. List the information contained in the heading section. Complete name Address Telephone number (including the area code)	Complete the heading section of your resume.
7. Discuss job objectives and career goals.	Using the job selected earlier, complete this section of your resume.
8. Review the characteristics of an attractive, complete resume.	Prepare a final keyboarded copy of resume.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Prepare an application/cover letter.	
1. Discuss importance of letter of application.	
2. Display several sample letters of application (both good and poor) to students.	Discuss good and bad characteristics of each letter.
3. Discuss good and bad characteristics.	Participate in discussion.
4. Discuss characteristics of favorable letter of application. Use good quality paper. Type the letter neatly. Address letter to specific person. Use correct grammar and sentence structure. Be original--do not copy letter from book. Be prepared to rewrite letter if necessary.	Participate in discussion.
5. Discuss purpose of letter of application. Attract reader's attention. Interest the reader in you as a prospective employee. Make the reader want to hire you.	Participate in discussion.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Application/cover letter cont.	
6. Discuss contents in opening paragraph of letter of application. Purpose of letter. Job you are applying for or type of work you are seeking. How you found out about the job.	Participate in discussion.
7. Discuss contents in middle paragraphs of letter of application. Education/qualifications related to job. Work experience related to job. Reasons for the company to hire you. Sell yourself.	Participate in discussion.
8. Discuss contents of closing paragraph of letter of application. Personal interview request. How to contact you. Enclosed resume with letter.	Participate in discussion
9. Display sample letters of application with missing parts.	Identify what information is missing from each letter.
10. Review characteristics of a favorable	Prepare a letter of application.

TEACHER STRATEGIES:

GOAL: Prepare form/application form.

1. Illustrate several different types of application forms.

2. Discuss importance of application form to employers.

   Provides additional information not contained on resume.
   Provides standardized record of each employee.
   Provides information regarding legibility, accuracy, neatness, abiltiy to follow directions, etc.

3. List basic information requested on almost all application forms.

   Personal data (name, address, phone).
   Social Security number.
   Position applying for.
   Educational background.
   Employment history.
   References.
   Signature.

STUDENT ACTIVITIES:

Discuss similarities/differences between various forms.

Participate in discussion.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Application form cont.	
4. List suggestions to follow when completing application form. Bring with you: A reliable pen. Your resume. Your social security card. Read entire application form before beginning. Print/write legibly. Be accurate and careful. Fill in all blanks--mark, "NA" if not applicable. Follow directions exactly.	
5. Demonstrate how resume is used when completing application form.	Compare information found on your resume with information requested on application form.
6. Give each student two application forms.	Complete two application forms--one printed and one typewritten.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Prepare a follow-up letter.	
1. Discuss the importance of a follow-up letter.	Participate in discussion.
2. Identify various type of follow-up letters. Thank-you letter. Letter of acceptance. Letter of refusal.	
3. Discuss purpose of follow-up letter.	Brainstorm for ideas.
Thank interviewer for his/her time and courtesy. Let interviewer know you are interested in the position. Remind interviewer of special qualifications. Return application form. Provide additional information.	
5. Discuss contents of follow-up letter--paragraph 1.	
Express appreciation for interview. Indicate position you applied for and date of interview.	

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Follow-up letter cont.	
6. Dicuss contents of paragraph 2. Restate interest in position. Mention unique quality that makes you the best person for the job.	
7. Discuss contents of paragraph 3. Tell interviewer you are looking forward to decision from company. Restate your address and phone number.	
8. Discuss possible implications of not writing a follow-up letter.	Participate in discussion.
9. Review contents of follow-up letter.	Prepare a follow-up letter.

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MATH
SURVIVAL/BASIC

TEACHER STRATEGIES:

1. Introduce manual problem solving techniques.

   a. Understand the problem.
   b. Develop a plan
   c. Carry out the plan.
   d. Check the results.

STUDENT ACTIVITIES:

Try a simple version of the problem in order to discover a pattern.

Sample: A farmer wants to fence a pasture. The four sides measure 1200 feet, 950 feet, 730 feet, and 850 feet. The wire he has chosen comes in 50-foot rolls.

How many rolls of wire should he buy?

Sample Solution: Some of the different approaches that you may find useful include:

- Draw a diagram
- Made a model
- Find pattern
- Solve a simpler problem of the same type
- Use a known formula
- Use an equation
- Guess and check

Carry out the plan.

a. Find the distance around (perimeter) the pasture. 1200' + 950' + 730' + 850' = 3730'
b. Divide the perimeter by the length of one roll of wire.
   3750'/50' roll = 74.6 rolls
c. Round up, if needed, to the next whole roll of wire. The farmer needs more than 74 rolls of wire. He should buy 75 rolls of wire.

TEACHER STRATEGIES:

2. Develop reasoning through problem solving techniques using modern technology.

STUDENT ACTIVITIES:

Using calculator or computer, determine how much it will cost the farmer to fence his pasture if the wire costs 30 cents per foot? Refer to sample problem.

Solution:

a. 50' roll x $0.30 per foot = $15 per roll.
b. 75 rolls x $15 = $1125.

What will it cost the farmer if he has to borrow the money for 90 days at 10% interest?

What is the amount of interest to be paid?

What is the total amount due on the note?

Using April 1, of the current year, what is the due date of the note?

Solutions:

a. Principal x Interest Rate x Time/ 365 = Interest amount
   $1125 x .10 x (90/365) = $28.13
b. Add principal and interest
   $1125 + $28.13 = $1153.13
c. April 30 days
   May 31 days
   June 29 days

   The due date should be June 29, of the current year.

TEACHER STRATEGIES:

3. Develop logical thinking through problem solving techniques using calculators/computers to solve given business problems.

STUDENT ACTIVITIES:

Develop spreadsheet formulas to solve these exercises.

Exercise 1: Your take home pay is $950 each month. Your estimated expenses for one month are given in the following table.

Estimated expenses:

Car payment	$150
Church donation	20
Entertainment	35
Gas for car	60
Groceries	165
Meals out	75
Rent	200
Savings	100
Telephone	20
Utility bills	75

Note: The above items can be adjusted to fit your community needs, standards, or culture.

Do you have enough money to pay your estimated expenses?

Exercise 2: You are a cook at a summer camp. The camp is open for a 16-week camping season. The average number of campers and staff is 240. You order 290 pounds of hamburger each week at a contracted price of $0.95 per pound. Your menu uses hamburger four times during the week.

a. How much hamburger meat are you allowing for each serving.
b. What is the cost per serving?

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MATH
APPLIED

Math--Applied

Anita Withers, Betty Besson
Beverly Wagner

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
GOAL: Perform math applications appropriate to the individual classes.	
Business Forms	
1. Show and describe examples of business forms.	
2. Demonstrate the proper way to obtain information to fill in the form--extensions, etc.	Practice figuring extensions, etc.
3. Provide data appropriate to fill in forms.	Complete business forms.
Checking Accounts	
1. Lecture on checking accounts and show various documents.	
2. Demonstate the proper check-writing procedures.	
3. Demonstrate proper recording of checks and deposits.	
4. Demonstate reconciliation procedures.	
5. Provide data appropriate to complete a checking account project from start to finish.	Complete appropriate checking account forms. Banking Simulation. Field trip to a bank.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Sales Tax	
1. Explain sales tax.	
2. Demonstrate the proper way to figure sales tax.	Practice figuring sales tax with and without a table.
3. Provide data appropriate to figure sales tax.	Complete activities using sales tax.
Payroll/Income Tax	
1. Explain payroll.	
2. Discuss terminology appropriate to payroll.	
3. Demonstrate procedures to figure payroll--showing different methods.	Practice figuring using the different methods.
4. Discuss deductions.	
5. Discuss income tax and tables.	
6. Provide data appropriate to figuring payroll.	Complete payroll using data provided. Students find earnings on a job in which they would be interested. Simulation: Understanding Taxes See attachments #3 and #4

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Interest	
1. Explain interest--simple and compound.	
2. Demonstrate the proper way to figure interest.	Practice figuring interest.
	Complete activities using interest.
3. Provide data appropriate to figure interest.	Students figure interest on the purchase of a car.
	Simulation: Buying a Car C. W. Publications
Tables and Graphs	
1. Show examples of tables and graphs used in business and office.	
2. Demonstrate the proper way to read tables and graphs.	Read simple tables and graphs.
3. Demonstrate the proper way to design tables and graphs.	Design simple tables and graphs.
4. Provide data necessary for preparation of tables and graphs.	Design tables and graphs with data provided.
	See attachments #5 and #6.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Investments	
1. Introduce types of investments.	
2. Discuss investment possibilities.	Class discussion.
3. Invite a speaker to discuss investments.	Be an alert participant during presentation.
4. Arrange a tour of a business so that the students can observe the stock market in action.	
5. Assign an investment project.	Students select an investment using a given amount of money. Follow the investment over a period of time. Use graphing software to chart results. Simulations: Contact FBLA Contact Denver Post See attachment #2

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Net Income/Loss	
1. Introduce the concept of net income/ loss.	
2. Present terminology.	
3. Discuss procedures for figuring net income/loss.	Participate in discussion.
4. Provide worksheets to figure net income/loss.	Do worksheets.
5. Provide data appropriate to figuring net income/loss.	Complete project provided. Application activities: Houghton Mifflin
Amortization/Depreciation	
1. Introduce the concept of amortization/depreciation.	
2. Present terminology.	
3. Discuss procedures for figuring amortization/depreciation.	Participate in discussion.
4. Provide worksheets to figure amortization/depreciation.	Do worksheets.
5. Provide data appropriate to figuring amortization/depreciation.	Complete project provided.

TEACHER STRATEGIES:	STUDENT ACTIVITIES:
Discounts	
1. Explain discounts.	
2. Demonstrate the proper way to figure discounts.	Practice figuring discounts.
3. Provide data appropritate to figure discounts.	Complete activities using discounts. Student figures discounts on items he/she would like to purchase--coats, denims, etc.
Format	
1. Explain formatting	
2. Define spacing terms: vertical horizontal pitch margins	
3. Demonstrate formatting skills: letters, reports, etc.	Prepare bulletin boards.
4. Explain methods of proper spacing--horizontally and vertically.	Students teach students through disccussion.
5. Provide practice problems to format.	Complete practice problems.
6. Provide unformatted problems	Complete unformatted problems in the proper format.

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SUGGESTED TRANSITIONAL SERVICES

Physically Disadvantaged

1. Special publications
2. Equipment modifications
3. Material modification
4. Accessibility to building and classroom

Mentally Disadvantaged

1. IEP/IVEP (Individual Education Plan/Individual Vocational Education Plan)
2. Special tutoring
3. Adjust to special situations as they arise

Other At-Risk

1. Support sessions
2. Peer group support
3. Special training for at-risk behavior
4. Loss (grief, divorce, and loss) support or After Care Group
5. Advisor/advisee groups
6. Motivate/reward system
7. Homebound classes

Worksheets for:

Communications

Math

with
Technology

BEST COPY AVAILABLE

Worksheets for:

STRATEGIES

Communications Math with Technology

An In-Service Workshop

ACKNOWLEDGEMENT

Appreciation is extended to Business Education Consultants in the following states:

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Connecticut	Mississippi	Utah
Illinois	Montana	Vermont
Iowa	Nebraska	Virginia
Kentucky	New York	Washington
Louisiana	Ohio	West Virginia
Massachusetts	Oregon	Wyoming

The curriculum materials that were shared contributed greatly to the development of the strategies in this manual. In addition, the materials contributed ideas for planned curriculum change by the participants.

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Lydia Kercher, Assistant Professor
University of Wyoming
Workshop Director

INTRODUCTION

The number-one skill identified by business and industry is the ability to communicate. It is important for business educators to examine writing and math in the curriculum and focus on basic writing and math skills. It is also important to incorporate technology in the curriculum. This manual of strategies was developed to assist teachers in this endeavor. All strategies can accommodate at risk groups (handicapped, disadvantaged) and other non-traditional populations.

The manual of strategies was developed by participants in a curriculum development workshop planned by Vocational Education faculty at the University of Wyoming and funded through a grant from the Wyoming State Department of Education under the Carl D. Perkins Vocational Education Act, P.L. 98-524.

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Robert Herring, Encampment High School
Carma Johnson, Green River High School
Kathy McCracken, Mountain View High School
Axel Stockhouse, Jr., Greybull High School
Carol Ann Strader, High School III, Cheyenne
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Anita Withers, Seaton Catholic High School

Project consultant was Dr. Birdie Holder, Head of the Vocational and Adult Education Department, University of Nebraska, Lincoln.

Carol Ann Strader
Nita Berg

COMMUNICATIONS
LISTENING

HANDOUT 1

Student Personal Listening Skill Assessment

How well do you listen? The following checklist will help you to determine whether you are a good or poor listener. Check the appropriate response in the columns at the right for each of the statements.

	Always	*Almost Always*	*Sometimes*	*Seldom*	*Never*
1. I have a real desire to listen to what others have to say when they are talking.	___	___	___	___	___
2. I listen to my capacity when others are talking.	___	___	___	___	___
3. By listening, I can guess a speaker's intent or purpose without being told.	___	___	___	___	___
4. I have a purpose for listening and am aware of it when others are talking.	___	___	___	___	___
5. I keep control of my biases and attitudes when listening to others speak so that these factors don't affect my interpretation of the message.	___	___	___	___	___
6. I analyze my listening errors so as not to make them again.	___	___	___	___	___
7. I listen to the complete message before making any judgments about what has been said.	___	___	___	___	___
8. I can tell when a speaker's biases or attitudes are affecting his/her message.	___	___	___	___	___
9. I ask questions when I don't fully understand the speaker's message.	___	___	___	___	___
10. I remain conscious of whether the speaker's meaning for words and concepts is the same as mine.	___	___	___	___	___

(Over for interpretation of score.)

Use the following scale to determine how well you listen.

90-100 = An outstanding listener.

80-89 = A good listener. Could benefit from listening training.

75-79 = An average listener. Could benefit very much from listening training.

Below 70 = A below-average listener. Needs listening training at the earliest opportunity.

Source: Johnson, I.W. and Pearce, C.G., "Assess and Improve Your Listening Quotient," BUSINESS EDUCATION FORUM, March 1990, pp. 22-28.

HANDOUT 2

Listening Skills Guidelines

The primary step toward improving your listening skill is to have the desire to improve. The desire to improve your listening skill may stem from wanting to learn more, to be better informed and more sophisticated, to be liked and respected, to be a more dependable person, to avoid embarrassments, or numerous other personal or professional reasons. Guidelines for improving listening skills are as follows:

1. Know your weaknesses in listening so you can work to improve them. Be aware of biases and negative attitudes.

2. Take a sincere interest in other people and their ideas.

3. Determine your purpose for listening in different listening situations. When you are aware of your purpose, you then know for what to listen.

4. Control the listening situation physically and mentally whenever possible. An environment free of major distractions and a person who is ready to focus his/her attention on the situation are necessary for effective listening.

5. Try to understand the speaker to some degree so that you can better understand the message. Looking for the speaker's purpose and point of view will help with this understanding.

6. Suppress the desire to talk; develop the desire to learn. If you talk more than 50 percent of the time in an average conversation, you need to make a conscious effort to talk less and listen more.

7. Focus on the speaker's message, interpret it, evaluate it carefully, (but not before you receive and interpret all the necessary information), and then respond to the message as needed.

8. Listen to the entire message to understand it, not to refute it. Except in debates, listening to refute is bound to be biased listening. Rather, you want to listen objectively to the whole message if you are to understand it.

9. Paraphrase the speaker's message, take notes, or ask questions whenever appropriate. For example, paraphrasing the speaker's message can let the speaker and you determine if you get the meaning from the message that the speaker intended. Take notes if it is vital that you remember certain information. Ask questions at appropriate moments if you do not understand something.

10. Ask follow-up questions if the conversation seems to be stalemated; follow-up questions can get the conversation back on track or can revitalize a discussion.

11. Increase your vocabulary so that you can understand more of what you hear.

12. Analyze your listening errors from time to time. At first, try to change your listening behavior a few minutes at a time. As you get better at it, increase the time.

Source: Johnson, I.W. and Pearce, C.G., "Assess and Improve Your Listening Quotient," BUSINESS EDUCATION FORUM, March 1990, pp. 22-28.

HANDOUT 3

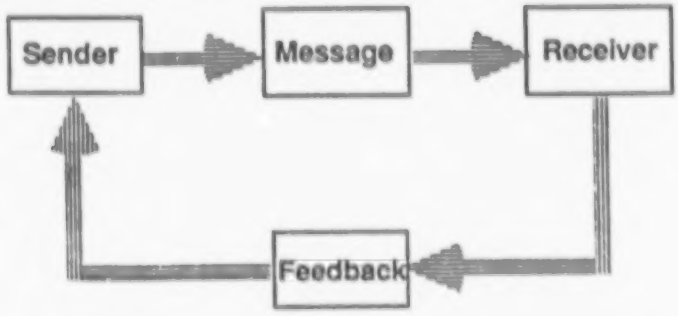
Basic Components of the Communication Process

The sender wants to communicate something and decides to

speak, write, send nonverbal signals, or produce visual message.

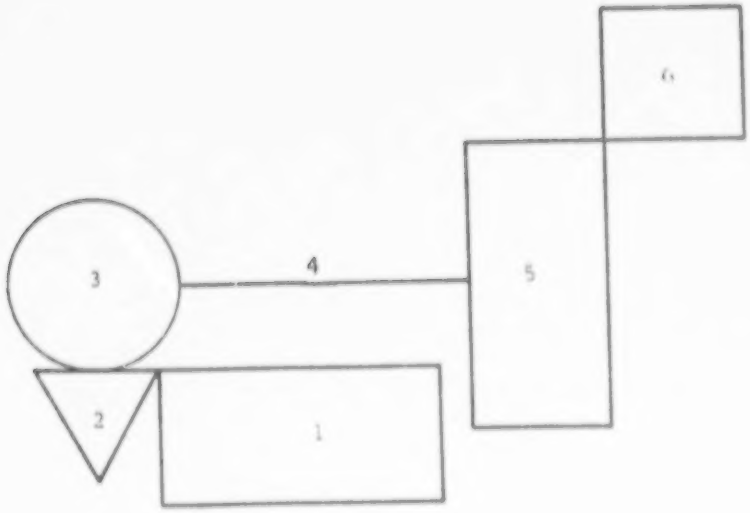
The receiver wants to understand sender's meaning and therefore

listens, reads, or observes nonverbal signals or visual information.

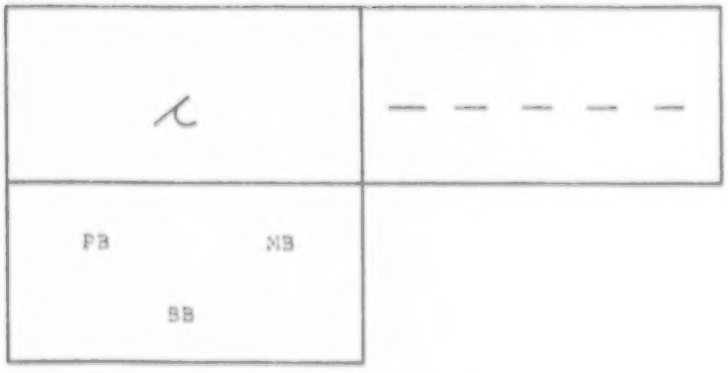


SOURCE: APPLIED COMMUNICATION, Module 1, "Communicating in the Workplace." Agency for Instructional Technology, Bloomington, Indiana.

HANDOUT 4



HANDOUT 5



SOURCE: SUNBURST COMMUNICATIONS, "Communication: The Basic Job Skill." References pages.

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MATH
APPLIED

APPENDIX D

ELECTRONIC MATH APPLICATIONS
Stock Project--Guide Sheet

Name _____
Period ____ Date _____

Directions: Follow the instructions below to do the math for buying and selling your stocks. Show all work on another sheet of paper. Label all work. Number your work using the same numbers below. If you decide to do extra credit stocks, do the work for each extra credit stock at the end of each number.

P U R C H A S E:

1. Write "TOTAL INVESTMENT: $20,000".

2. Alphabetically list the NAME of the four (4) stocks you are going to use in this project, the DIVIDEND on the date of purchase, and figure the RATE OF INCOME (dividend divided by close on date of purchase), and state the PORTION of the $20,000 invested in each one (leave about $400 for commission). Set this up in table format such as:

	Name	Dividend	Rate of Income	Portion of Dollars Invested
A.				
B.				
C.				
D.				

3. List at least one (1) reason for selecting each of the stocks. When you list them, do it by letter. Otherwise, you will have to rewrite the name each time. Be sure to keep the same order you set up in #2 above.

4. FIND NUMBER OF SHARES:

   NUMBER OF SHARES = PORTION INVESTED / MARKET PRICE (CLOSE)

   Divide the portion invested in each of the stocks by the market price on the day you bought the stocks. This gives you the number of shares you purchased (to the whole number--you cannot buy a fraction of a share). State and label the number of shares. (#2 divided by market price on purchase date.)

5. FIGURE MARKET PRICE FOR EACH STOCK

   Multiply the number of shares bought by the market price of each stock on the date of purchase. State and label the market price for each stock. (Remember, list your stocks by letter and in the same order as in #2 above.) (#4 X market price on purchase date.)

Attachment #2 (Cont)

6. FIGURE TOTAL MARKET PRICE

   Find the sum of the individual market prices. (Add figures in #5.)

7. FIGURE COMMISSION:

   The commission charges are in the table below:

Money Involved	Commission
Under $100	As mutually agreed
$100 to $800	2% plus $6.40
$801 to $2,500	1.3% plus $12.00
$2,500 and Above	.9% plus $22.00

   (#6 X figure in chart)

8. Find TOTAL INVESTMENT: TOTAL MARKET PRICE + COMMISSION (#6 + #7).

9. Find SAVINGS ACCOUNT AMOUNT.

   Any money not invested in stocks will be put into a savings account.

   A. Subtract the TOTAL INVESTMENT from the original $20,000.
   B. Write the name of your savings bank.
   C. State the rate of interest paid by your savings institution. (#1 - #8)

S A L E:

10. FIGURE MARKET PRICE FOR EACH STOCK

    Multiply the number of shares bought (#4) by the market price of each stock on the date of sale. State and label the market price for each stock. Remember to show all of your work. List your stocks by letter and in the same order as in #2 above. (#4 X market price on sale date.)

11. FIGURE TOTAL MARKET PRICE

    Find the sum of the individual market prices in #10. (Add figures in #10.)

12. FIGURE COMMISSION

    Use the Commission chart in #7. We are assuming that taxes and fees are included in the commission. (#10 X figure in chart.)

13. FIGURE NET PROCEEDS

NET PROCEEDS = TOTAL MARKET PRICE - (COMMISSION + TAXES + FEES) (#11 - #12)

14. FIND YOUR PROFIT OR LOSS FOR EACH INDIVIDUAL STOCK

PROFIT = SALE MARKET PRICE - PURCHASE MARKET PRICE
LOSS = PURCHASE MARKET PRICE - SALE MARKET PRICE

Find the profit or loss for <u>each</u> stock. If you enter the Sale Market Price first each time, it will be easier to figure out whether you have a profit or loss. If it is a profit, the answer will be positive. If it is a loss, the answer will be negative. Remember to show all of your work. (#10 - #5)

15. FIND THE INTEREST EARNED ON YOUR SAVINGS ACCOUNT

A. Figure the number of days you held the stock (including weekends).
B. Using the formula, I = PRT, find the interest your savings account earned. Multiply principal--amount in savings--times interest rate times number of days divided by 360. (#9A X #9C X #15A ÷ 360)

16. FIND THE PROFIT OR LOSS FOR THE ENTIRE PROJECT

Add the profits and subtract the losses in #14. Add the interest in #15B. Subtract the two commissions in #7 and #12. Remember to show your work.

17. Write a summary of your project. Use the grading sheet as a reference for content of the summary. This sheet shows all of the work for purchasing and selling your stock. When your summary is finished, anyone would know the results of your stock project without looking at this sheet.

M I S C E L L A N E O U S:

18. Using reference materials, find the following information for each of the companies in which you invested. Write this on the top of your Stock Quotation Sheet.

A. Abbreviated name (name from stock quotations).
B. Full name.
C. Major product/purpose of the business.
D. How long they have been paying dividends.
E. The rating given by Standard and Poor.
F. The 52-week high and low from the <u>Wall Street Journal</u>.

19. Fill in the information on the Stock Summary Sheet. Use the answers generated on this work sheet.

20. Make a line graph for each stock. Plot the market price and date. Use two squares to indicate dollars on the left axis and one square to indicate dates on the horizontal axis. Dots should be made lightly; a line should join the dots. NONE OF THE DOTS SHOULD SHOW WHEN THE LINE IS FINISHED.

21. EXTRA CREDIT

    Use computer software to do the graphs. Ask your teacher for more information.

APPENDIX D.1

STOCK INFORMATION SHEET

- - - -

EXERCISE 16: Russell is a payroll assistant for Dewey Chemical Company. His company pays its sales personnel a 2% commission for all weekly sales in excess of $850. Russell must accumulate the weekly sales data for these employees and calculate their commission. Their sales for this week are recorded below.

Daily sales report

Name	Mon	Tue	Wed	Thu	Fri
Cobbs	$262	$214	$290	$169	$110
Gregory	150	185	200	137	278
Hunter	522	250	200	380	120
Lowery	370	456	925	300	399

a. Collect the data from the weekly sales report. Calculate the total sales for each employee and organize it in a table.

b. Use the sales totals to determine the amount of commission each sales employee will receive.

c. The manager of the company is considering a commission based on daily sales totals, rather than weekly sales totals. What effect do you think this would have on the sales personnel's commission income?

Applied Mathematics, Center for Occupational Research and Development, (1988).

EXERCISE 19: Rose is a payroll clerk at a hardware store. Rose calculates the weekly wages, commission, and total earnings for the sales employees. She collects a wealth of data, as follows, summarizing last week's hours worked and sales.

Hourly pay and commission rate

Name	Pay/Hour	Commission %
Smith	$3.50	10%
Zales	4.00	15%
Travler	3.65	15%
Jones	3.85	12%
Hall	3.90	8%

Daily hours worked

Name	Mon	Tue	Wed	Thu	Fri
Smith	8.0	8.0	7.5	8.5	8.0
Zales	7.0	7.0	7.0	8.0	7.0
Travler	8.0	8.0	8.0	7.5	8.5
Jones	9.0	9.0	9.0	9.0	4.0
Hall	7.0	7.0	7.0	7.0	7.0

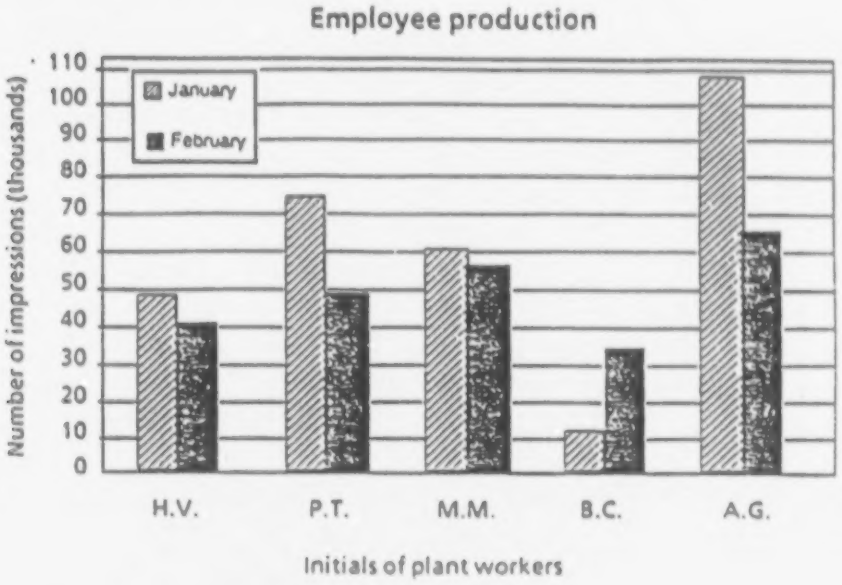
Daily sales

Name	Mon	Tue	Wed	Thu	Fri
Smith	$150.00	$ 80.00	$ 27.00	$ 45.00	$ 59.00
Zales	100.00	100.00	75.00	100.00	25.00
Travler	95.00	105.00	100.00	150.00	50.00
Jones	100.00	90.00	85.00	95.00	200.00
Hall	70.00	65.00	105.00	100.00	45.00

a. Organize Rose's data, by employee, into a table of totals for the week.

b. Interpret the data to compute for each employee:
   1. Gross wages (hours worked times pay/hour)
   2. Commission earnings (commission % times total sales)
   3. Total gross earnings (gross wages plus commission earnings)

EXERCISE 12: You supervise the staff in a print shop. Below is a bar graph showing the output of five employees doing similar work.



a. What span of time is covered by the data on the graph?

b. How many workers does the graph portray?

c. What was B.C.'s output for January? for February?

d. Which worker has the most consistent work output?

e. How much do you think each worker will produce in March? Why?

Applied Mathematics, Center for Occupational Research and Development, 1988.

EXERCISE 14: You are considering buying stock in the CBM Corporation. A brochure on the company reports the following.

CBM Corporation stock

Year	Earnings per share
1980	$1.12
1981	1.27
1982	1.75
1983	1.80
1984	1.92
1985	2.16
1986	2.54
1987	2.58

a. The table of data makes it possible to examine the trend in the earnings for CBM stock. What kind of graph would be helpful to display this trend?

b. Create a line graph to display this trend, showing how the earnings have changed over the indicated years.

c. Can you predict what the earnings per share might be for the year 1988? 1989? Is there a problem with this? Why or why not?

Applied Mathematics, Center for Occupational Research and Development, 1988.